CLAIMS

1. An inkjet printhead comprising:
a wafer providing a supporting substrate, the wafer having a drop ejection side and a liquid supply side;
a plurality of nozzles, each nozzle having a liquid passage leading to it from the liquid supply side of the wafer for providing ejectable liquid to the nozzle;
drop ejection actuators and associated drive circuitry corresponding to each nozzle respectively;
the nozzles, ejection actuators, associated drive circuitry and liquid passage being formed on and through the wafer using lithographically masked etching techniques; wherein,
each of the liquid passages is formed by etching a blind hole into the wafer from the drop ejection side, and etching a supply passage from the liquid supply side of the wafer to the hole; such that,
the blind hole extends into the wafer passed the drive circuitry; and,
the supply passage is etched to a depth that extends passed the blind end of the hole by an overlap greater than the sum of the fabrication tolerances of both etch processes.
2. An inkjet printhead according to claim 1 wherein the overlap is between 5 microns and 30 microns
3. An inkjet printhead according to claim 1 wherein the overlap is between 10 microns and 20 microns
4. An inkjet printhead according to claim 1 wherein the width of the supply passage is greater than 14 microns.
5. An inkjet printhead according to claim 1 wherein the width of the supply passage is less than 28 microns.
6. An inkjet printhead according to claim 1 wherein the drop ejection actuators are thermal bend actuators.
7. An inkjet printhead according to claim 1 wherein the drop ejection actuators are gas bubble generating heater elements.

8. An inkjet printhead according to claim 7 further including a plurality of nozzle chambers, each nozzle chamber corresponding to a respective nozzle; wherein, at least one the of the gas bubble generating heater elements are disposed in each of the nozzle chambers respectively; such that,
a bubble forming liquid can be supplied to the nozzle chamber for thermal contact with at least one of the bubble generating heater elements so that a bubble of the bubble forming liquid generated by one of the heater elements causes a droplet of the ejectable liquid to be ejected from the nozzle.

9. An inkjet printhead according to claim 8 wherein the bubble forming liquid is the same as the ejected liquid.

10. An inkjet printhead according to claim 1 wherein the printhead is a pagewidth printhead.

11. A method of ejecting drops of an ejectable liquid from an inkjet printhead, the printhead comprising a wafer providing a supporting substrate, the wafer having a drop ejection side and a liquid supply side, a plurality of nozzles, each nozzle having a liquid passage leading to it from the liquid supply side of the wafer for providing ejectable liquid to the nozzle, drop ejection actuators and associated drive circuitry corresponding to each nozzle respectively, the nozzles, ejection actuators, associated drive circuitry and liquid passage being formed on and through the wafer using lithographically masked etching techniques; wherein,
each of the liquid passages is formed by etching a blind hole into the wafer from the drop ejection side, and etching a supply passage from the liquid supply side of the wafer to the hole; such that,
the blind hole extends into the wafer passed the drive circuitry; and,
the supply passage is etched to a depth that extends passed the blind end of the hole by an overlap greater than the sum of the fabrication tolerances of both etch processes, the method of ejecting drops comprising the steps of:
providing the ejectable liquid to each of the nozzles using the associated liquid passage; and
actuating the drop ejection actuator to eject drops of the ejectable liquid from the nozzle.

12. A method according to claim 11 wherein the overlap is between 5 microns and 30 microns.

13. A method according to claim 11 wherein the overlap is between 10 microns and 20 microns

14. A method according to claim 11 wherein the width of the supply passage is greater than 14 microns.

15. A method according to claim 11 wherein the width of the supply passage is less than 28 microns.

16. A method according to claim 11 wherein the drop ejection actuators are thermal bend actuators.

17. A method according to claim 11 wherein the droplet ejection actuators are gas bubble generating heater elements.

18. A method according to claim 17 further including a plurality of nozzle chambers, each nozzle chamber corresponding to a respective nozzle; wherein,
at least one the of the gas bubble generating heater elements are disposed in each of the nozzle chambers respectively; such that,
a bubble forming liquid can be supplied to the nozzle chamber for thermal contact with at least one of the bubble generating heater elements so that a bubble of the bubble forming liquid generated by one of the heater elements causes a drop of the ejectable liquid to be ejected from the nozzle.

19. A method according to claim 18 wherein the bubble forming liquid is the same as the ejected liquid.

20. A method according to claim 11 wherein the printhead is a pagewidth printhead.

21. A method of fabricating inkjet printheads, the printhead comprising a wafer providing a supporting substrate, the wafer having a drop ejection side and a liquid

supply side, a plurality of nozzles, each nozzle having a liquid passage leading to it from the liquid supply side of the wafer for providing ejectable liquid to the nozzle, drop ejection actuators and associated drive circuitry corresponding to each nozzle respectively, the method comprising the steps of:

forming the nozzles, ejection actuators, associated drive circuitry and liquid passage on and through the wafer using lithographically masked etching techniques; including,

forming each of the liquid passages by etching a blind hole into the wafer from the drop ejection side;

filling the hole with resist;

etching a supply passage from the liquid supply side of the wafer to the hole and subsequently stripping the resist from the hole; such that,

the blind hole extends into the wafer passed the drive circuitry; and,

the supply passage is etched to a depth that extends passed the blind end of the hole by an overlap greater than the sum of the fabrication tolerances of both etch processes.

22. A method according to claim 21 wherein the overlap is between 5 microns and 30 microns.

23. A method according to claim 21 wherein the overlap is between 10 microns and 20 microns.

24. A method according to claim 21 wherein the width of the supply passage is greater than 14 microns.

25. A method according to claim 21 wherein the width of the supply passage is less than 28 microns.

26. A method according to claim 21 wherein the droplet ejection actuators are thermal bend actuators.

27. A method according to claim 21 wherein the droplet ejection actuators are gas bubble generating heater elements.

28. A method according to claim 27 further including a plurality of nozzle chambers, each nozzle chamber corresponding to a respective nozzle; wherein,
at least one the of the gas bubble generating heater elements are disposed in each of the nozzle chambers respectively; such that,
a bubble forming liquid can be supplied to the nozzle chamber for thermal contact with at least one of the bubble generating heater elements so that a bubble of the bubble forming liquid generated by one of the heater elements causes a droplet of the ejectable liquid to be ejected from the nozzle.

29. A method according to claim 28 wherein the bubble forming liquid is the same as the ejected liquid.

30. A method according to claim 21 wherein the printhead is a pagewidth printhead.

31. A printer system incorporating an inkjet printhead comprising:
a wafer providing a supporting substrate, the wafer having a drop ejection side and a liquid supply side;
a plurality of nozzles, each nozzle having a liquid passage leading to it from the liquid supply side of the wafer for providing ejectable liquid to the nozzle;
drop ejection actuators and associated drive circuitry corresponding to each nozzle respectively;
the nozzles, ejection actuators, associated drive circuitry and liquid passage being formed on and through the wafer using lithographically masked etching techniques; wherein,
each of the liquid passages is formed by etching a blind hole into the wafer from the drop ejection side, and etching a supply passage from the liquid supply side of the wafer to the hole; such that,
the blind hole extends into the wafer passed the drive circuitry; and,
the supply passage is etched to a depth that extends passed the blind end of the hole by an overlap greater than the sum of the fabrication tolerances of both etch processes.

32. A printer system according to claim 31 wherein the overlap is between 5 microns and 30 microns.

33. A printer system according to claim 31 wherein the overlap is between 10 microns and 20 microns.

34. A printer system according to claim 31 wherein the width of the supply passage is greater than 14 microns.

35. A printer system according to claim 31 wherein the width of the supply passage is less than 28 microns.

36. A printer system according to claim 31 wherein the droplet ejection actuators are thermal bend actuators.

37. A printer system according to claim 31 wherein the droplet ejection actuators are gas bubble generating heater elements.

38. A printer system according to claim 37 further including a plurality of nozzle chambers, each nozzle chamber corresponding to a respective nozzle; wherein,
at least one the of the gas bubble generating heater elements are disposed in each of the nozzle chambers respectively; such that,
a bubble forming liquid can be supplied to the nozzle chamber for thermal contact with at least one of the bubble generating heater elements so that a bubble of the bubble forming liquid generated by one of the heater elements causes a drop of the ejectable liquid to be ejected from the nozzle.

39. A printer system according to claim 38 wherein the bubble forming liquid is the same as the ejected liquid.

40. A printer system according to claim 31 wherein the printhead is a pagewidth printhead.